

**REMARKS**

Claims 1, 3, 5, 6, 9-14, 16-19 and 21-25 are present in the application for consideration by the Examiner. Several of the claims have been amended solely to emphasize, although it is not believed necessary, that a system and method are set forth for controlling secondary load power consumption during operation of an aircraft. The amendment to the claims was initiated in part by the Examiner's statement in paragraph 5, page 4 of the office action that "no specific definition was given to the term "secondary load" in the specification." This is not true.

Paragraph 0022 reads "The engines 16 provide power for flight and maneuvering of the aircraft 12 as well as for onboard vehicle electrical and electronic devices and systems. The engines 16 have a rated total output power level, which consists of primary output power, used primarily for flight and maneuvering, and secondary output power, used primarily for the secondary loads 18." (underlining ours). Paragraphs 0024-0026 read as follows "The secondary electrical loads 18 include direct power secondary loads 38 and indirect power secondary loads 40. The direct loads 38 receive electrical power directly from the engine 16, whereas the indirect loads 40 receive power from the engines 16 via one of the direct loads 38, such as generators 42", "The direct loads 38 may include the generators 42 and multiple pumps, such as hydraulic pumps 44 and fuel pump 46. The generators 42 may be in the form of auxiliary power units and may have a power rating that exceeds that of the standard engine core secondary horsepower extraction capability of the engines 16. The hydraulic pumps 44 may be used for hydraulic loads 48, such as for raising and lowering landing gear, adjusting flaps, slats, ailerons, or other leading or trailing edge devices (not shown), or for other equipment or systems that are

hydraulically actuated,” “The indirect loads 40 include electrical devices and systems that may receive electrical power from a generator, such as lights, computer systems, navigation controls, air-conditioning systems, telecommunication systems, and various other electrical devices and systems known in the art.” (underlining ours). Again at page 12, paragraph 0038, the applicants recite “The present invention provides secondary electrical load power management system for an aircraft that provides additional power to secondary electrical loads above that of a standard engine core secondary horsepower extraction capability limit. The present invention satisfies an increased level of power consumption requirements from implementation of additional electrical devices and systems. The present invention in so doing increases efficient use of engine power to allow a smaller than normal aircraft engine to be utilized that satisfies flight performance requirements, but is smaller in size and is lighter in weight, and yet satisfies requirements for an increased level of secondary output power availability. Also, through use of a smaller engine fuel consumption is minimized and travel range is increased.” (underlining ours). Still further, the applicants have clearly stated what the invention accomplishes “it provides a method for operating secondary electrical loads in response to an engine secondary power extraction limit and current operating conditions of an aircraft. In general, power supplied to the secondary loads is limited by the total engine power output rather than by the engine core secondary power extraction capability. In so doing, the present invention allows an aircraft to be designed to include direct power secondary electrical loads that have a combined rated total power consumption level that is greater than that of rated maximum secondary power extraction of an aircraft engine. Thus, the present invention allows an engine to supply an increased amount of electrical

power and satisfy electrical power consumption requirements for an increased number of secondary electrical loads during certain operating conditions.”

The foregoing repetition of material found in the specification is believed necessary, as the Examiner believed himself authorized, in the absence of a specific definition of “secondary load” to give this term its broadest reasonable interpretation and allow him to conclude that one of the references, namely “Lacy does distinguish between two different types of loads based on the way they are treated (uncontrolled and controlled loads) and therefore one of ordinary skill in the art could reasonably say that Lacy teaches primary and secondary loads.”

The Examiner has rejected claims 1, 3-6, 8-19 and 21-25, all of the claims in the case as unpatentable over Soucy, Bushell and Lacy. It is the Examiner’s position that Soucy teaches a power management system for an aircraft including a plurality of secondary loads (direct – generator, indirect – load), at least one flight condition sensor (engine speed sensor) and a controller (fuel supply controller and governor) coupled to the plurality of loads and the sensor. The Examiner admits that Soucy does not explicitly teach the types of loads being powered, nor how the controller will control the system to work efficiently, leaving that to Bushell, relied on as teaching one of the secondary electrical loads powered in an aircraft being a lighting system. The Examiner states that it would have been obvious to one of ordinary skill in the art to have one of the indirect secondary electrical loads in Soucy’s invention be the lighting system of an aircraft since “Soucy fails to teach specific loads being powered and for providing aircraft lighting needed to best visualize night vision system.” Lacy is relied on as teaching a system with a controller and primary (uncontrolled residential) and secondary (controlled residential)

loads and that Lacy teaches a controller that can determine the secondary power, current operating conditions and secondary power extraction limit and to operate the plurality of secondary loads in response to the secondary power extraction and limits. The Examiner concludes therefore that it would have been obvious to one of ordinary skill in the art at the time of the invention to have one of the secondary electrical loads in Soucy's invention be the lighting system of the aircraft, since Bushell teaches a lighting system being one of the loads powered by an aircraft and Soucy's fails to teach specific loads being powered.

Lacy discloses a residential electrical system for controlling the electrical supply to residential homes. The residential system includes a fuel cell system that supplies electricity to residential homes having controlled loads and uncontrolled loads. The controlled loads refer to appliances that can be disconnected via a load sense and switch circuit, and uncontrolled loads refer to appliances that can only be disconnected via circuit breakers in a house. The electrical system regulates the electrical connections of the load sense and switch circuits to prevent the residential electrical loads from exceeding a power threshold. The control circuit of Lacy monitors the output power of the fuel cell system to all of the residential loads including the controlled and uncontrolled loads. Based on that output power, the control circuit regulates the controlled loads.

The system of Lacy does not make any distinction between which loads are of primary or higher importance. Lacy simply controls the loads that can be regulated via the load sense and switch circuits. Although Lacy discloses determining the power demand from specific controlled loads, this information is used to determine priority of

which controlled load is to be deactivated. The loads that demand more power are deactivated first. Lacy does not determine the combined power demand of the controlled loads nor is a power limit set on the controlled loads group. Clearly Lacy's residential system is completely unrelated and operates in a substantially different manner than the system and methods claimed.

Again as to Bushell, which is relied on for its teaching of an aircraft lighting system, it should be noted, a very specific lighting system, i.e., one for "use with night vision goggles." The lighting is for providing external lighting. It is not seen why or how any artisan would select this lighting system for introduction into Soucy's aircraft.

The applicants wish to incorporate their arguments as submitted in their June 11, 2007 amendment that Soucy as admitted by the Examiner does not teach nor suggest the invention, that the system of Lacy is entirely unsuited for use in an aircraft (Soucy) and even if implemented as suggested by the Examiner would not result in the instant invention, that Bushell's teaching has nothing to do with the Soucy aircraft invention and would not be considered by the skilled in the art to make the giant leap in construction proposed by the Examiner and that Lacy is not analogous art. Again, these arguments are incorporated by reference.

Finally, the applicants are unsure how the stated references would be combined and even if combined what would be achieved by such combination.

In view of the above, withdrawal of the rejection and allowance of the claims in the case are respectfully requested.

Respectfully Submitted,  
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